AMENDMENT TO THE CLAIMS

1. (Currently amended) An analyser comprising:

a substrate of diamond, sapphire or a polymer material;

an array of elongate capillary channels formed in a first surface of the substrate;

means for driving a sample to be tested along the channels whereby the velocities of components of the sample along the channels depend on the relative molecular weights of those components;

a radiation source adjacent the first surface of the substrate and a radiation detector array disposed on either the first surface of the substrate or a second surface of the substrate opposing the first surface of the substrate~~either side opposing sides of the channel array~~ so as to simultaneously detect the presence of material in the channels as interruptions in the radiation path between the radiation source and the radiation detector array; and

wherein the radiation detector array comprises an array of obscured regions on the substrate under the channels, and means for detecting an electric current formed by electron-hole pair generation at the obscured regions.

2. (Original) An analyser according to claim 1, in which the substrate is formed of diamond.

3. (Original) An analyser according to claim 1, in which the substrate is formed of sapphire having a coating of nanocrystalline diamond.

4. (Original) An analyser according to any one of claims 1 to 3, in which the channels are less than 250 um deep.

5. (Original) An analyser according to claim 4, in which the channels are less than 150 um deep.

6. (Previously presented) An analyser according to claim 1, in which the channels are less than 200μm wide.

7. (Previously presented) An analyser according to claim 1, in which the channels are less than 100 μm wide.

8. (Previously presented) An analyser according to claim 1, in which the radiation source comprises an ultraviolet light source.

9. (Original) An analyser according to claim 8, in which the ultraviolet light source is operable to generate ultraviolet light at a wavelength of about 260 nm or about 200 nm.

10 -15. (Cancelled).

16. (Currently amended) An analyser according to claim 1, in which the regions are formed on the first surface of the substrate at the bottom ~~at a lower surface~~ of each channel.

17. (Currently amended) An analyser according to claim 1, in which the regions are formed on the second surface ~~at lower surface~~ of the substrate substantially beneath each channel.

18. (Currently amended) An analyser comprising:

a substrate of diamond or sapphire material;

an array of elongate capillary channels formed in a first surface of the substrate;

means for driving a sample to be tested along the channels whereby the velocities of components of the sample along the channels depend on the relative molecular weights of those components;

a radiation source adjacent the first surface of the substrate and a radiation detector array

disposed on either the first surface of the substrate or a second surface of the substrate opposing the first surface of the substrate~~opposing sides of the channel array~~ so as to simultaneously detect the presence of material in the channels as interruptions in the radiation path between the radiation source and the radiation detector array.

19. (Previously presented) An analyser according to claim 18, wherein the substrate is formed of diamond.

20. (Previously presented) An analyser according to claim 18, wherein the substrate is formed of sapphire having a coating of nanocrystalline diamond.

21. (Previously presented) An analyser according to claim 18, wherein the radiation source comprises an ultraviolet light source operable to generate ultraviolet light at a wavelength of about 260 nm or about 200 nm.

22. (Previously presented) An analyser according to claim 18, wherein the radiation detector comprises an array of obscured regions on the substrate under the channels, and means for detecting an electric current formed by electron-hole pair generation at the obscured regions.